

PSYCHIATRIC ASPECTS OF BRONCHIAL ASTHMA

A CRITICAL REVIEW AND CASE REPORTS

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SOMATIC illnesses are accompanied by psychological reactions in major or minor form, varying according to the nature and severity of the disorder, the age, sex, personality structure and intelligence of the patient. Moreover, emotional experiences are known to have somatic concomitants and consequently a psychic disturbance may be expressed through physical symptoms. For example, it is widely accepted that psychiatric factors are of fundamental significance in many cases of bronchial asthma and the object of this review is to explore the rôle of such factors in the disorder. Although this paper will deal primarily with the psychiatric aspects of asthma, it is not to be regarded as supporting the concept of monocausality. Allergic factors have been shown to be important in many cases and Stockvis (1959) remarks that "allergy is invariably present in genuine asthmatic attacks, however prominent the psychic determinant might be." He quotes the findings of Hanhart, who demonstrated the presence of sensitivity to allergens in 92 per cent. of 1,200 asthmatic patients studied.

HEREDITY AND ASTHMA.

In a comprehensive and painstaking investigation Schwartz (1952) reviewed this subject and reported a clinical and genetic study of 191 asthma probands. He concluded that asthma is an inherited disorder having a genetic relationship with vasomotor rhinitis, Besnier's prurigo and hay fever. Considering the incidence of asthma in the general population he suggested that there is possibly recessive in addition to dominant inheritance, but that the most likely mode of transmission is dominant heredity with failing manifestation. The degree of manifestation of the "asthma gene" was given as about 40 per cent.

Other studies have devoted more attention to the incidence of psychiatric disorder in asthmatic families. McDermott and Cobb (1939) investigated fifty asthmatic patients and thirty of the group were regarded as having "emotional factors" in their illness. It was found that in the near relatives of 47 per cent. of this sub-group there were indications of "unusual behaviour, hospitalisation in mental institutions or marked emotional instability." However, of the twenty patients in whom emotional factors were not evident only 15 per cent. had a positive family history of psychiatric disorder. Leigh (1953) studied fifty asthmatics, the group being highly selected in that all had been referred to a psychiatrist. Two-thirds of his subjects gave a family history of allergy and in just over 50 per cent. one or more near relatives had had either a neurosis or psychosis.

THE "ASTHMATIC PERSONALITY."

It has been postulated that certain disease processes are more likely to occur in persons having a characteristic personality structure. Russek (1958), for example, has reported that young persons suffering from coronary thrombosis have, amongst other personality traits, an intense desire for recognition and are rigid, meticulous, and over-worked, whilst not appreciating their own limitations. Again, many authors have attempted to delineate a specific personality profile in patients with bronchial asthma. However, personality testing is a controversial subject and the validity of those tests commonly employed clinically at present has been questioned. Their critics have pointed out that little or no attempt has been made to use statistical method and highly subjective test materials are employed.

The concept of specificity of personality in psychosomatic disorders is supported by some workers and rejected by others. The protagonists of this theory suggest that asthma occurs in individuals with a common and distinctive core in their personality structure. They contend that the various traits which constitute the asthmatic personality core are not in themselves specific and are evident in patients with other psychosomatic disorders, but it is argued that they are present here in a precise and unique proportion (Bastiaans and Groen, 1955). Gillespie (1936) commented "asthmatics exhibit what would be called a neurotic type of personality long before an asthmatic attack began." Rogerson (1937) investigated a group of thirty children suffering from the "asthma-eczema-prurigo" syndrome and was impressed by the fact that many were over-anxious, lacked self-confidence and had aggressive characteristics. In their environment he found over-protection and over-anxiety with "thwarting" and "limiting" factors. McDermott and Cobb (1939) commented on exaggerated orderliness whilst Brown and Goiten (1943) found asthmatics to be of a "cyclothymic disposition associated with paranoid features, repressed hostility and self-punishment motives." Trueting and Ripley (1948) described the asthmatic as immature, seclusive, and the predominant mood was one of depression.

It is difficult to recognise any common denominator in these personality profiles and it would seem inappropriate to base a description of the pre-morbid personality on tests performed after the illness has been established. Furthermore, in many studies the selection of patients has been biased and hypotheses which may apply to cases referred to psychiatrists do not necessarily pertain to asthmatics generally. Leigh (1956), reporting on a group of 150 asthmatics followed up for seven years, concluded that "the only personality core common to the group was probably the result of the asthma itself." More recently Franks and Leigh (1959), working within Eysenck's concept in which personality is described in terms of introversion—extraversion and neuroticism, studied four groups, each of twenty subjects—in-patient neurotics, out-patient neurotics, asthmatics and normals. None of the groups differed significantly on the introversion-extraversion scale of the Maudsley Personality Inventory, but there was a "marked tendency for the asthmatics to occupy a position intermediate between" neurotics and normals on the neuroticism scale. This confirmed the impression that asthmatics

had a mildly neurotic personality and they suggested that this common core of neuroticism is probably secondary to the dysfunction itself.

This tends to be supported by the few reports regarding the kind of psychiatric symptoms occurring during or between asthmatic attacks. Trueting and Ripley (1948) concluded that depression occurred in almost all patients during attacks and in 60 per cent. of their 51 patients anxiety was a prominent feature. Leigh (1953) described "neurotic symptoms" in addition to asthmatic attacks in 80 per cent. of his patients. Moreover, 90 per cent. were prone to severe depressive episodes and one-sixth of the group were admitted to a psychiatric hospital on account of this mood disturbance. In a more recent report Knapp and Nemetz (1960) reviewed clinically and retrospectively 406 asthmatic attacks occurring in a group of patients with severe, chronic bronchial asthma. They studied the feelings and fantasies accompanying the attacks and also the antecedent events in the 48-hour period prior to onset. In the prodromal phase there were no evident feelings or fantasies in 48 per cent. of cases. In the remainder a variety of emotional manifestations preceded and lead directly into acute asthma, the most prominent of these being fear, irritability and excitement. Before the attack had become established there was a sense of sadness, helplessness and hopelessness and during it the patient was absorbed in the physical illness. In 6 per cent. of cases there were fantasies of dangerous or poisonous substances within the body.

THE PRECIPITATION OF ATTACKS BY EMOTION.

For many years clinicians have commented on how emotional disturbance may initiate asthmatic episodes and numerous studies have been published attempting to outline a relationship between specific conflict situations and the development and perpetuation of bronchial asthma. The psychoanalysts have been particularly active in this field of research and some authors feel justified in proposing specific emotional influences. French (1939) remarked "the asthmatic attack is precipitated as a rule by a temptation which threatens to estrange the patient from a mother figure," and further, that the conflict situations are "of a rather uniform and typical character." In a later publication French and Alexander (1941) classified the situations capable of producing attacks. They may occur as a result of sudden intense emotion such as anger whilst crying can either initiate or alleviate an attack. Disturbance of a dependent relationship, danger to a key-figure in the environment, sexual conflicts or identification with the dyspnoeic attacks of others have all been cited as precipitating factors. They also point out that the patient may use his attacks in an hysterical manner for the purpose of "gain" and thereby manipulate his environment. Furthermore, they propose that the asthmatic attack is representative of a cry of longing for the mother. Hurst (1943) regarded "annoyance and anxiety" as the most common precipitants whilst Millar and Baruch (1953) stressed the importance of anger. Extravagant and varied assertions have been made by other writers and it becomes difficult to select from so many situations several which might be regarded as specific.

In comparison with these studies Gillespie (1936) found "almost every conceivable type of relationship between psychological factors and asthmatic

attacks," whilst Leigh (1953a), Linford Rees (1956), and Stockvis (1959) regard the concept of specificity of psychic trauma as unproven.

The relationship between the asthmatic child and his environment has been widely explored. Bakwin and Bakwin (1948) remarked that the asthmatic's affinity with his mother was abnormally close, he was over-protected, his activities were limited and he was sheltered from over-excitement. One might speculate that this over-protection could be the result rather than the cause of the disorder. Millar and Baruch (1948) studied a group of 63 clinically allergic children and compared them with a control group of 37 without symptoms of allergy. In the experimental group 62 children (98.4 per cent.) were claimed to have experienced maternal rejection but in only 9 (24.3 per cent.) of the control group was this noted. However, this study was based on subjectively interpreted data obtained during interview and play therapy. In a more recent study Long, *et al.* (1958), have reported that the asthmatic child wishes to be close to his mother and there is a fear of separation. They studied the mothers of 18 such children and found that they "wished to keep the child in an infantile dependent state." All the children were admitted to hospital and there exposed to their own house dust, but this produced no respiratory disturbance irrespective of their skin sensitivity to house dust. On the one hand, therefore, the children are regarded as utilizing their illness to maintain a dependent tie with their mothers but, on the other, improve on admission to hospital. This apparent discrepancy is explained by postulating an ambivalent relationship. In addition to a fear of separation there is also a fear of being too close, and they "perceive the realization of this wish to be close to the mother as dangerous" and obstructing further growth and development. Separation can act by reducing the anxiety in association with this ambivalent relationship. They further postulate that hospitalization also reduces anxiety for asthmatic patients can utilize effective defence mechanisms and one such mechanism is their ability to elaborate and derive comfort from reunion fantasies. Fitzelle (1959) investigated the parents of asthmatic children to test the hypothesis that they would possess distinctive personality characteristics and attitudes towards child rearing to a degree which would be statistically significant. The control group was parents of non-allergic children having diverse illnesses. The personality characteristics were explored with the Minnesota Multiphasic Personality Inventory and parental attitude was assessed with the U.S.C. Parent Attitude Survey. No significant difference was found between the experimental and control groups using either index, nor between the parents of those children with the most severe compared to those with the mildest symptoms.

It would appear that the claims made for specificity of emotional stimuli and the significance of a disturbed mother-child relationship in asthma are, as yet, unproven. Most of these claims are based on subjectively interpreted material forthcoming during psycho-analytic interview and it is doubtful if they would survive scientific scrutiny. It is more feasible to regard different asthmatic episodes in the same individual as capable of being precipitated by a variety of factors. Thus, one attack may be due to contact with the appropriate allergen

and the next in relationship to infective or psychological factors. The one feature common to all of these is that they produce a disturbance in homeostasis in persons who are genetically predisposed.

It is relevant at this point to discuss briefly several of the patients who have been treated in this department and outline the rôle played by emotional factors in their asthmatic attacks. However, these cases are only representative of those referred to psychiatrists and cannot be regarded as typical of asthmatics generally.

CASE No. 1.

Case No. 1. Mrs. J. was a 30-year-old housewife, who was referred with a 16-year history of asthma, which was becoming progressively more disabling, and had resulted in frequent admissions to hospital. She had had a very unstable home background. Her father was an alcoholic who had died fifteen years earlier, and her mother was an irritable, stubborn woman of 65 years who was an epileptic. Her father, two paternal uncles, a sister, cousin and nephew had all "bad chests." Although adequately provided for materially, there were frequent rows between her parents on account of her father's alcoholism and the patient was extremely unhappy at home. As a child she had nightmares, walked in her sleep, and was a nail-biter, but had no difficulties at school, and was of average ability. Until her marriage when 20 years of age she had seven different jobs but had to leave each because of her asthma and irregular attendance. Her marriage has been reasonably satisfactory and her husband has developed a very protective attitude towards her. In 1951, because of the intractable nature of her symptoms and failure to respond to a medical regime, she had a thoracic vagotomy without any permanent benefit.

Whilst under our care, an attempt was made to explore the association between asthmatic attacks and life situations, anticipating that treatment would be based on these findings. However, with discussion of her various problems attacks became more frequent and severe, and it was decided on this account to concentrate on the emotional setting of current attacks. In hospital attacks were noted to be precipitated by any event which threatened her security—minor disagreements with other patients, and on one occasion when she was moved to another bed. Eventually she began to discuss and appreciate how suppressed emotions produced an attack. She was well on discharge, but was unable to attend subsequently for follow-up purposes.

No detailed exploration of psychodynamics could be made because of the risk of precipitating severe attacks, but it was evident that (i) sudden emotion could produce an attack, especially when her security was threatened, (ii) attacks occurred instead of openly expressed resentment and hostility, and (iii) she was utilizing her illness to manipulate circumstances to her advantage.

Case No. 2. Mrs. G. was a 24-year-old housewife who was referred because of asthmatic attacks of five years' duration. Again there was a family history of instability and parental discord. The patient had no neurotic traits in childhood, made a good adjustment at school, and was then employed as a shop assistant and had a fairly satisfactory work record. She married when 18 years of age, and her first child was born four months later, but died of "convulsions" when five months old. The second child, a girl, is 2 years of age.

A few days after the death of the child she developed a productive cough and dyspnoea. She gradually became more breathless and was admitted to hospital one month later and subsequently had frequent attacks of asthma necessitating in-patient treatment on several occasions. She was well during her second

pregnancy but when the baby was six weeks old the attacks began again. About this time they moved into a prefabricated house in which they still live, and from then the attacks occurred every two weeks or so. The episode leading to admission had been precipitated by an argument with her husband.

Psychotherapy was conducted along very simple lines in view of the patient's rather low intelligence. It was found that she was well only during those periods when she was near her mother and that the attacks were often precipitated by worry in her own home or anxiety about how her mother was faring. When near the mother she felt secure and happy, but on the other hand disliked her own home and neighbours. It transpired that during the pregnancy, when well, she had been living near home. During exacerbations in the illness her mother invariably took both the patient and the child to live with her. The patient said, "If it wasn't for her, life wouldn't be worth living," and admitted that she relied on her mother for many things, especially since the onset of the illness. However, she described the mother as argumentative and jealous, and felt at times that she could "murder her." It is apparent that her relationship with this parent was a hostile one while at the same time being very dependent on her.

The circumstances of the child's death were explored and she remarked that prior to his death he had been breathing very quickly and she wondered if he had asthma. She felt a considerable amount of guilt, firstly that he had been unwanted, and secondly that perhaps she had neglected him in some way.

In interview it was repeatedly pointed out to her that there was a relationship between emotional upsets and asthmatic attacks. Once she became aware of this, she was able spontaneously to recall numerous incidents in the past when asthma had occurred in a setting of emotional turmoil. In addition, she became rather more aware of the kind of relationship that she had with her mother. She became symptom-free and remained well for the remainder of her stay in hospital. She was subsequently reviewed as an out-patient and although attacks still occurred they were not so severe, prolonged or crippling.

Case No. 3. This patient illustrates how the onset of the illness was related to the disturbance of a dependent relationship. Psychologically the attacks can be understood as an expression of resentment and hostility in a person who throughout life has had difficulty in exteriorizing emotion.

Mr. S. was a clerk aged 40 years. He had been an only son whose father had died following an accident when the patient was 6 years of age and his mother had died suddenly in 1955 following a cerebro-vascular accident. She had always been over-protective and health-conscious, and the patient described his childhood as "spoiled, pampered, and well looked after." He was denied the freedom other boys had. Even at the age of 10 years he was put to bed excessively early and recalls vividly how he used to watch with envy his friends playing in the street below. He had to visit many devoted and fond relatives in his mother's company and he was often embarrassed such was the degree of their affection and solicitude for him. He described vehemently how he was "bored to tears and soured by it all." Nevertheless, although never reprimanded or punished, he sought his mother's advice and approval in all things. As in Case No. 2, his relationship to his mother was undoubtedly a hostile-dependent one.

Throughout life he has had great difficulty in exteriorizing emotion. Thus, when angry, he would not demonstrate it overtly, but would feel "tightened up inside." He liked to be popular and was extremely sensitive to expressions of hostility on the part of others and did his best to avoid such circumstances by adopting a placating rôle.

He married at the age of 27 years, but until his mother's death continued to make his home with her in spite of his wife's effort to break this tie. He found

his wife disappointing as a partner and resented the fact that she paid more attention to her own parents than to him. His mother, however, provided many of the attributes he apparently sought from his wife and she continued as the key-figure in his environment until her death. A few weeks later he noticed that he could no longer bound up the stairs to his office with his usual vitality, and was quite dyspnoeic on reaching the top. He developed frequent acute asthmatic episodes requiring numerous admissions to hospital and between these attacks he was wheezy and breathless.

Further exploration revealed that he considered his wife lavished much more attention on their children than on him and also that the asthmatic attacks were often precipitated by minor disagreements with her. He had no one to turn to after his mother's death to satisfy his dependency needs other than his wife, and she was either unwilling to or incapable of accepting these demands.

In psychotherapy he was encouraged to ventilate his feelings and his interpersonal relationships and dependency needs were discussed. He appreciated how his attacks were often precipitated by emotion, and he appeared to gain understanding of the psychogenic factors operating in his illness. He seemed to think that other than understanding the various factors involved he had little more to do. At this stage he was cheerful and brisk and was not dyspnoeic. Subsequently, however, when he realised that he would have to adopt different attitudes to his circumstances than formerly and deal with his various problems instead of escaping from them in illness his condition began to deteriorate again. He became very demanding and dependent on the doctor treating him and this dependency was utilised to show him that it was merely a repetition of a life-long pattern. His wife was interviewed on several occasions but obviously was quite incapable of adopting the dominant rôle. Since discharge he has attended as an out-patient for supportive psychotherapy. During these interviews he is afforded an opportunity to discuss his problems and at the same time discharge some of his hostility and resentment. His attacks persist but are rather less frequent, he has returned to his work in a full-time capacity and has not required readmission to hospital.

THE ELECTROENCEPHALOGRAM IN BRONCHIAL ASTHMA.

Investigation of the electroencephalographic pattern of asthmatics has produced a number of conflicting reports. The first of such studies was by Rubin and Moses (1944), who drew attention to a characteristically high alpha index, i.e., the percentage of time that alpha rhythm can be counted in standard time records. Dees and Lowenbach (1948) reported their observations of 85 allergic children, 56 of these being asthmatics, and compared the findings in this experimental group with a control group of non-allergic children. Occipital dysrhythmia was noted in almost 50 per cent. of the allergic subjects and there appeared to be a positive correlation between this finding and both the duration of symptoms and a family history of allergy. The longer the illness the higher the proportion of patients having changes in the occipital pattern and a positive family history was associated with dysrhythmia twice as commonly as was a negative one. They concluded that allergy may be expressed in an abnormal E.E.G.

However, when Chobot and his co-workers (1950) repeated this work in 80 allergic children, including 52 asthmatics, they dismissed occipital dysrhythmia as being of no significance, noting that it was often observed in normal children. There was no apparent correlation between the clinical types of allergy and

E.E.G. patterns and, as had been observed by Dees and Lowenbach, anti-histamine preparations failed to alter the tracings. The authors were careful to point out that interpretation of the E.E.G. of childhood is difficult as norms have not been well established and as the incidence of slow potentials varies with age and physiological maturation. The older the child the less uncertain is the interpretation of the record.

Holmgren and Kraepelin (1953), reporting on one hundred asthmatic children, aged 2 to 15 years, showed that 36 per cent. had abnormal records as compared to 5 per cent. of a "normal" population of 150 children. They admitted that at present no satisfactory answer can be given to explain this difference. Leigh and Pond (1956) studied the E.E.G.s of 55 adult asthmatics and contrasted them with a group of psychiatric patients matched for age, sex, and social status. These controls were patients with psychopathic states or severe neurosis. It was found that 60 per cent. of the asthmatics had normal records. In 30 per cent. there was an excess of intermediate slow activity and the remaining 10 per cent. showed only minor abnormalities. Almost identical changes were present in the control group. It was considered that there was nothing to differentiate the E.E.G. anomalies in adult asthmatics from those in a group of patients with neurosis or personality disorder.

It has been postulated that in a proportion of cases the abnormalities may be secondary to repeated episodes of hypoxia. However, Holmgren and Kraepelin (1953) were unable to confirm the presence of a positive correlation between the duration of illness or age of onset and the frequency of abnormal E.E.G.s. They noted that during acute attacks of asthma marked changes occurred but these subsided at the end of the attack. The high incidence of psychiatric disorder in relatives of asthmatics and the hereditary nature of the disorder would seem to indicate that the anomalies are transmitted on a genetic basis.

EXPERIMENTAL STUDIES IN ASTHMA.

It may be of interest to refer briefly to some of the experimental studies in asthma of which many have dealt with conditioning.

Ziegler and Elliott (1926) compared the heart rate and respiratory response of six asthmatics when asked to think of some emotion-provoking topic. In three of these subjects psychological factors were regarded as conspicuous and in these patients there was a significantly greater response to the test situation. Wolf et al. (1950) noted congestion and swelling of the nasal mucosa of allergic patients when stressful material was introduced at psychiatric interview. They suggested that the bronchial mucosa acts in a like manner, and this response to stressful stimuli is a defensive one of shutting out and washing away. Funkenstein (1950) investigated the responses to mecholyl and adrenaline in six patients who were mentally ill and had a history of asthma. When the patient was mentally disturbed but the asthma in abeyance he demonstrated altered sympathetic nervous system function. When not psychotic, but having asthma, there was increased parasympathetic activity.

The relationship between conditioning and asthmatic attacks has been noted for many years, but only recently have attempts been made to study this experimentally. Dekker and his co-workers (1957) were able to produce conditioned asthmatic attacks in a laboratory setting. Two patients with severe bronchial asthma were sensitive to grass-pollen and house-dust extract. Each reacted to the appropriate allergen administered as an aerosol in the laboratory. Following these exposures they had an asthmatic reaction after the inhalation of the neutral solvent or oxygen, or even with the introduction of the glass mouthpiece disconnected from the inhalation apparatus. Deconditioning by psychotherapeutic supportive interviews had only temporary success. They outlined the work of Noelpp. An asthmatic-like reaction was induced in guinea pigs by an aerosol of antigen or histamine. This, the unconditioned stimulus, was then paired with a conditioned auditory stimulus. After five conditioning trials, one of eight animals had an asthmatic type of respiration in response to the conditioned stimulus. With an additional five conditioning trials an asthmatic response occurred in three more of the animals. Ottenberg (1958) produced conditioned asthma in young male guinea pigs, but these responses extinguished rapidly. A variation in susceptibility was found suggesting an inherent biological difference in disease reaction patterns. The author admits that although the observed responses closely resembled human asthma "whether the attacks reported are analogous to human bronchial asthma is still subject to much controversy."

PSYCHIATRIC TREATMENT OF ASTHMA.

The psychiatrist's therapeutic approach to asthma does not preclude the use of medicinal measures and, whilst regarding physical and psychiatric measures as complementary, I will only deal with the latter.

Reports of individual cases who have responded satisfactorily to psychiatric treatment may appear to be impressive, but as Leigh (1953a) has pointed out, a study of therapeutic response must of necessity include a matched control group of asthmatics not treated by recognised psychiatric methods, a standardised therapeutic regime, the use of statistical measures and a sufficiently long follow-up period, the proposed minimum being five years. Most of the reported studies have neglected the vagaries of the disorder with its tendency to remission and relapse and no scientifically acceptable investigation of response to psychological measures exists at present. The various forms of psychiatric treatment which have been employed may be outlined.

1. Individual Psychotherapy.

The psychiatric interview is the principle method of treatment in the several forms of psychotherapy. A number of authors, amongst them Rogerson (1937) and French and Alexander (1941) discuss the favourable results achieved with this form of therapy. Rogerson studied the response of twenty-two asthmatic children to simple psychotherapy and play therapy. Seven were free from symptoms for six months or more, five for two to four months, four for over one month, three were not improved and three not available for review. The

follow-up period is obviously inadequate and the study does little to elucidate the rôle of psychotherapy in asthmatic patients. Sixteen adults were treated by French and Alexander and in all eight became symptom-free, whereas five were much improved and the remainder unchanged. The follow-up periods were inadequate as the longest was four years and the shortest three months. Only three of eleven children treated were symptom-free and again the duration of follow-up was short—the maximum period being twenty months. Stockvis (1959) has recorded his initial impressions of forty allergic patients (thirty-five asthmatics) treated psychotherapeutically and subsequently reviewed for periods varying between six months and over two years. An improvement was noted in 40-50 per cent. and he concluded that in those cases where psychotherapy is indicated the patient often benefits.

It is apparent that although individual cases seem to respond satisfactorily to psychotherapeutic measures the experimental criteria as outlined by Leigh require to be fulfilled before the psychiatrist can substantiate his clinical impressions by categorically stating that psychotherapy is an effective method of treatment.

2. Group Psychotherapy.

There is widespread agreement that individuals in a group are influenced by the attitudes and reactions of those around them, and that some emotions readily become intensified in this setting. When such features can be utilized by harnessing them to therapeutic goals this form of treatment is a valid approach to a variety of emotional problems.

Bastiaans and Groen (1955) advocated group psychotherapy in association with routine medical measures. They remarked that their groups were initially very sceptical about this approach, hostile to the group method and denied the relevance of emotional factors. Whilst they used a control series the number of patients studied was too small for a valid comparison of results. Scarle and Crocket (1957) treated sixteen female asthmatic patients who were considered to have significant emotional factors in their illness. A physician co-operated by advising on physical treatment concurrent with psychiatric measures. The group was treated by a modified analytic technique closely following that described by Foulkes (1948). Each patient was initially assessed by a physician without any special psychiatric training and the relative preponderance of allergic, infective and psychological factors was assessed. The experimental group consisted of those patients in whom psychological factors were regarded as prominent and six control groups of varied composition were established; for example, where allergic factors were conspicuous and infection and psychological mechanisms were regarded as of minor importance; or again, where infection was considered to be of primary significance. All patients were treated medically, but the experimental series had, in addition, group therapy. It was shown that this group did not do significantly better than the controls with regard to the asthma, but there was a marked reduction in anxiety and tension. It was concluded that, on this account, it may be a useful adjunct in the treatment of those patients who exhibit significant emotional factors in their illness. Groen and Pels (1960), however,

regarded their results with group psychotherapy as disappointing. More studies are required before this form of treatment can be adequately evaluated, but even if its only benefit is in reducing anxiety and leading to an improvement in the patient's attitude to his illness it would seem to be a rewarding therapeutic measure.

3. Environmental Adjustment.

If we postulate that situational factors are of importance in precipitating attacks in certain individuals the hypothesis could be tested by removing the patient from his environment and observing his response. It might be claimed by some clinicians that any improvement could be attributed to removal from a specific allergen, but this is not the only explanation, as has been shown by the studies of Long et al. which have been already outlined. Again Peshkin (1930) found that in his series of 425 asthmatic children forty-one did not respond to a medical regime. Of these twenty-five were treated by environmental change and twenty-three were markedly improved or relieved. It was eventually possible to return seventeen of the children to their homes, and presumably to the same allergen—containing milieu but 76 per cent. maintained their improvement. The sixteen children not treated by environmental manipulation did not improve. Rogerson et al. (1935) reported that certain children suffering from some of the manifestations of the “asthma-eczema-prurigo” complex were sent to a convalescent home and usually the more intractable cases were chosen. Again, the majority showed an immediate improvement. Hurst (1943), commenting on this subject, said “the bad influence of the home on many asthmatic children is to a great extent a reflexion of their parents’ anxiety. It is the psychological rather than the allergic atmosphere from which they need to be removed.” He remarked on the frequency with which an asthmatic episode follows the first visit of parents to a child who has been moved to new surroundings. Hallowitz (1954) found that 85 per cent. of his patients were symptom-free or much improved after separation from their families.

Such measures may be avoided by incorporation of the patients’ relatives into the therapeutic regime although a proportion will show themselves incapable of modifying their attitudes. It is in this sphere that the contribution of the psychiatric social worker or almoner is invaluable.

4. Other Measures.

E.C.T. has seldom been used for the treatment of asthma, but has been employed when depressive symptoms have developed in an asthmatic individual. It was used by Kerman (1946) for two asthmatics who developed depressive illnesses and in both there was a satisfactory improvement in mood. Leigh (1953a) gave E.C.T. to six asthmatic patients where depression was the presenting disorder and no harmful effects were noted on the asthmatic condition either during or after completion of the course. Cohen and Holbrook (1947) postulated that “autonomic imbalance” occurs in certain allergic individuals and on the basis of this hypothesis gave a course of E.C.T. to two female patients with “extrinsic bronchial asthma.” Both were made worse. It is evident that E.C.T. has no place

in the treatment of asthma, per se. Godlowski (1946) found that of eight cases of allergic bronchial asthma who had failed to improve on other measures, seven responded to insulin shock therapy with complete disappearance of symptoms. The duration of follow-up varied from eight months to two and a half years. The insulin dosage was between 80 and 180 units and the duration of treatment was six to nine weeks. Sargent (1951) treated a 28-year-old male asthmatic by leucotomy. The illness was of eighteen years' duration and there had been no response to any other form of treatment. Prior to the operation he was having two to three attacks weekly, whereas in the two years following operation he had only three attacks and anxiety was less prominent. However, there was a marked personality change post-operatively.

DEATH FROM ASTHMA.

In those patients presenting with a long history of bronchial asthma it is common to find emphysematous changes in the lungs eventually culminating in right heart failure and death. In others death may occur in status asthmaticus or suddenly and unexpectedly. Robertson and Sinclair (1954), after a review of previous studies, describe the clinical and pathological features of eighteen cases of fatal asthma. Of their patients thirteen died suddenly, without warning and often in a few minutes. The post-mortem findings in such cases are characteristic and consist of voluminous lungs which do not collapse when the thorax is opened, extensive mucous plugging of the bronchi, thickening and hyalinization of the basement membrane of the bronchial mucosa, eosinophilic infiltration of the bronchial walls and hyperplasia with degeneration of the mucous glands. Although the pathological features have been well documented the immediate cause of these sudden deaths has not been clearly defined.

Whether sudden death occurs more frequently in patients with marked emotional factors in their illness is open to question, but Robertson and Sinclair pointed out that a "psychological background" was present in twelve cases, although not expanding on this comment. Leigh's case (1955) adds further weight to this in view of the presumptive connection between a psychotherapeutic interview and sudden death. He reported in detail the case of a 40-year-old asthmatic woman who died suddenly nine hours after her fourth interview during which she had been extremely disturbed. Discharge of emotion may be shown in various ways; for example, by weeping or increased gastric acid secretion, and it seems reasonable to postulate that an acute emotional discharge is associated with an excessive secretion of mucous into the bronchi. It was suggested that sudden death several hours after psychotherapeutic interview is probably the result of parasympathetic over-activity during the intervening period, with increased bronchial secretion and death from asphyxiation.

CONCLUSIONS AND COMMENTS.

In many cases of asthma there is an allergic component which is genetically determined, but psychic influence may determine the degree to which allergic factors can become manifest. With respect to the personality of asthmatics, there

is no general agreement as to its structure or even if such a specific personality-type exists. It is generally agreed that emotional upset and conflict situations are often involved in the development of bronchial asthma, and it would appear that a variety of psychic determinants may be operating. Asthmatic attacks may be partly understood in terms of a conditioning model.

Psychotherapy, allied with medicinal measures as indicated, must remain the first and most important therapeutic measure. In assessing the patients milieu social work is essential both as an exploratory and therapeutic measure. It is, of course, out of the question and unnecessary for a psychiatrist to see every case of asthma referred to hospital or seen by his practitioner. On the other hand, psychiatric treatment can offer little in long-standing cases especially where irreversible secondary physical changes have occurred. Referral to a psychiatrist might be considered in the following instances:

- (i) where complex psychological factors become obvious to the clinician within the first few attendances,
- (ii) where there is an unexpected failure to respond to appropriate physical measures of known potency,
- (iii) where there is a discrepancy between the degree of physical incapacity and physical signs,
- (iv) where attacks consistently occur in certain circumstances; for example, if they clear up in hospital only to recur almost immediately on discharge, or again if they are noted to occur only when relatives are visiting.

Experimental evidence on the part played by conditioning is an additional reason for early referral should emotional factors be considered important.

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REFERENCES.

- BAKWIN, R. M., and BAKWIN, H. (1948). *J. Pediat.*, **32**, 320.
- BASTIAANS, J., and GROEN, J. (1955). *Psychogenesis and Psychotherapy of Bronchial Asthma. Modern Trends in Psychosomatic Medicine* (edited by D. O'Neill). London: Butterworths.
- BROWN, E. A., and GOITEN, B. L. (1943). *J. nerv. ment. Dis.*, **98**, 638.
- CHOBOT, R., DUNDY, H. D., and PACELLA, B. L. (1950). *J. Allergy*, **21**, 334.
- COHEN, S., and HOLBROOK, C. S. (1947). *Psychosom. Med.*, **9**, 213.
- DEES, S. C., and LOWENBACH, H. (1948). *Ann. Allergy*, **6**, 99.
- DEKKER, E., PELSER, H. E., and GROEN, J. (1957). *J. Psychosom. Res.*, **2**, 97.
- FITZELLE, G. T. (1959). *Psychosom. Med.*, **21**, 208.
- FOULKES, S. H. (1948). *Introduction to Group-Analytic Psychotherapy*. London: Heinemann.
- FRANKS, C. M., and LEIGH, D. (1959). *J. Psychosom. Res.*, **4**, 88.
- FRENCH, T. M. (1939). *Amer. J. Psychiat.*, **96**, 87.
- and ALEXANDER, F. (1941). *Psychogenic Factors in Bronchial Asthma. Psychosomatic Medicine Monograph IV*. National Research Council, Washington, D.C.
- FUNKENSTEIN, D. H. (1950). *Psychosom. Med.*, **12**, 377.
- GILLESPIE, R. D. (1936). *Brit. med. J.*, **1**, 1285.
- GODLOWSKI, Z. (1946). *Brit. med. J.*, **1**, 717.
- GROEN, J. J., and PELSER, H. E. (1960). *J. Psychosom. Res.*, **4**, 191.

- HALLOWITZ, D. (1954). *Amer. J. Orthopsychiat.*, **24**, 576.
- HOLMGREN, B., and KRAEPELIN, S. (1953). *Acta. Paediat.*, **42**, 432.
- HURST, A. (1943). *Brit. med. J.*, **1**, 403.
- KERMAN, E. F. (1946). *Psychosom. Med.*, **8**, 53.
- KNAPP, P. H., and NEMETZ, S. J. (1960). *Psychosom. Med.*, **22**, 42.
- LEIGH, D. (1953). *Practitioner.*, **170**, 381.
- (1953a). *Int. Arch. Allergy*, **4**, 227.
- (1955). *Psychosom. Med.*, **17**, 232.
- (1956). *Med. Pr.*, **236**, 153.
- and POND, D. A. (1956). *J. Psychosom. Res.*, **1**, 120.
- LONG, R. T., LAMONT, J. H., WHIPPLE, B., BANDLER, L., BLOM, G. E., BURGIN, L., and JESSNER, L. (1958). *Am. J. Psychiat.*, **114**, 890.
- MCDERMOTT, N. T., and COBB, S. (1939). *Psychosom. Med.*, **1**, 201.
- MILLER, H., and BARUCH, D. W. (1948). *Psychosom. Med.*, **10**, 275.
- (1953). *Ann. Allergy*, **8**, 754.
- OTTENBERG, P., STEIN, M., LEWIS, J., and HAMILTON, C. (1958). *Psychosom. Med.*, **20**, 395.
- PESHKIN, M. M. (1930). *Am. J. Dis. Child.*, **39**, 774.
- REES, Linford (1956). *J. Psychosom. Res.*, **1**, 98.
- ROBERTSON, C. Kelman, and SINCLAIR, K. (1954). *Brit. med. J.*, **1**, 187.
- ROGERSON, C. H., HARDCASTLE, D. H., and DUGUID, K. (1935). *Guy's Hosp. Rep.*, **85**, 289.
- ROGERSON, C. H. (1937). *Quart. J. Med.*, **30**, 367.
- RUBIN, S., and MOSES, L. (1944). *Psychosom. Med.*, **6**, 31.
- RUSSEK, H. I., and ZAKMAN, B. L. (1958). *Amer. J. med. Sci.*, **235**, 266.
- SARGANT, W. (1951). *Lancet*, **2**, 87.
- SCARLE, A. B., and CROCKET, J. A. (1957). *J. Psychosom. Res.*, **2**, 157.
- SCHWARTZ, M. (1952). *Acta. Allergy*, Supp. II.
- STOCKVIS, B. (1959). *Psychosomatic Aspects and Psychotherapy in Allergic Diseases*. International Textbook of Allergy. (Edited by Jamar, J. M.). Copenhagen: Munksgaard.
- TRUETING, T. F., and RIPLEY, H. S. (1948). *J. nerv. ment. Dis.*, **108**, 380.
- WOLF, S., HOLMES, T. H., TRUETING, T., GOODELL, H., and WOLFF, H. G. (1950.) *J. Allergy*, **21**, 1.
- ZIEGLER, L. H., and ELLIOTT, D. C. (1926). *Amer. J. med. Sci.*, **6**, 172.

REVIEW

HANDBOOK OF NEUROLOGICAL DIAGNOSTIC METHODS. By F. McDowell, M.D. and G. Wolff, M.D. (Pp. 210; figs. 65. 36s.) London: Baillière, Tindall & Cox, 1960.

THIS handbook fulfils a need. It is too detailed and long for the undergraduate but the houseman in the neurological wards, and one hopes in the general medical wards, will find much practical guidance. This bench book is the culmination of 28 years' neurological practice and teaching in the Neurological Division of the Department of Medicine of the Cornell Medical College. It is a practical manual of the examination of the central nervous system. It also contains detailed information on performance of special tests such as perimetry, cystometrics, caloric tests, electroencephalography, lumbar encephalography, arteriography and myelography. The print is good but the book is a little too big for the pocket and possibly nothing would be lost if it were pruned, particularly the last forty pages.